REMARKS

Reconsideration of this application is requested. The claims presented for reconsideration are claims 1, 6 – 21, 25, 28, 32 – 37, 50, 54, and 58 – 63.

Claims 1, 25, and 50 are amended. Support for the amendment to claim 1 can be found, for example, in paragraphs 0062 – 0063, paragraphs 0111 – 0112, and claim 3 as originally filed. Support for the amendment to claim 25 can be found, for example, in paragraphs 0062 – 0063, paragraphs 0111 – 0112, and claim 27 of the specification as originally filed. Support for the amendment to claim 50 can be found, for example, in paragraphs 0062 – 0063, paragraphs 0111-0112, and claim 53 as originally filed. Paragraph 0111 provides an example of catalyst in an environment where coke is the only carbon present and the oxygen in the catalyst is the only oxygen present. Paragraphs 0111 – 0112 also provide an example of how coked catalyst is not degraded when exposed to temperatures of 550°C or less in an atmosphere that does not contain an oxygen-containing gas.

Claims 3 –5, 22 – 24, 26 – 27, 29 – 31, 51 – 53, 55 – 57, 64 – 65, and 67 are canceled. Previously withdrawn claims 38, 40 – 49, and 66 are also canceled without prejudice or disclaimer. Applicants reserve the right to pursue the subject matter of these claims in a divisional application.

I. Claim Rejections - 35 U.S.C § 103(a)

All claims were rejected under 35 U.S.C. § 103(a) as being unpatentable individually over Fung et al. (U.S. Published Patent Application 2002/0013505), Lattner et al. (U.S. Patent 6,023,005), Janssen et al. (U.S. Published Patent Application 2002/0169067), or Cao et al. (U.S. Published Patent Application 2003/0231999). The rejection is respectfully traversed.

Claims 1, 25, and 50 as amended now require cooling regenerated catalyst from a temperature of 580°C or greater to a temperature of 550°C or less. The cooled, regenerated catalyst is then mixed with coked catalyst, wherein the only carbon present is the carbon in the coke (i.e., there is little to no hydrocarbon feed or other source of available, reactive carbon) and the only oxygen present is in the oxygen in the catalyst (i.e., there is little or no oxygen-containing gas present, such as O_2 or steam). The requirement that the mixing temperature must

be below 550°C when mixing occurs is based on applicants' finding that silicoaluminophosphate molecular sieve particles in an oxygen-depleted environment can react with coke at temperatures above 550°C. See paragraphs 0111 – 0115 of the specification as filed. At temperatures below 550°C, the catalyst shows little reaction with coke on the surface of the catalyst. However, at higher temperatures, both CO and CO_2 are formed by heating coked catalyst in a helium atmosphere. Since the only source of carbon is the coke on the catalyst, and the only source of oxygen is the catalyst itself, the gas phase CO and CO_2 is believed to represent a reaction between coke and oxygen from the catalyst.

The claimed invention is based on the recognition that the temperature of a silicoaluminophosphate catalyst having coke on it surface must be kept below 550°C if an oxygen-containing gas is not present in the atmosphere surrounding the catalyst. A simple individual optimization of the temperature, the amount of coke, or the oxygen content in the atmosphere surrounding a catalyst would not lead to the claimed invention. The claimed invention is based on the newly recognized interaction between silicoaluminophosphate catalyst and coke on the catalyst surface at high temperatures when no other oxygen sources are present.

Fung et al., Lattner et al., Janssen et al., and Cao et al., do not describe or suggest a process where catalyst is regenerated at a temperature of 580°C or greater, cooled to a temperature of 550°C or less, and then mixed with coked catalyst under conditions where the coke contains the only available carbon and the catalyst contains the only available oxygen. For example, Lattner et al. describes regenerating catalyst at a temperature of from 550°C to 700°C (Col. 6, lines 29 – 31). Lattner et al. also describes cooling catalyst in a regenerator to maintain a desired catalyst temperature in the regenerator. (Col. 6, lines 37 – 40) However, Lattner et al. does not describe or suggest a requirement that regenerated catalyst must be below 550°C prior to mixing the regenerated catalyst with coked catalyst. Additionally, Lattner et al. states that the regenerated catalyst is mixed with coked catalyst and a methanol feed. (Col. 6, lines 41 – 49) The methanol feed represents both a source of available carbon and a source of available oxygen. This is in contrast with claimed requirement that the coke contains the only carbon present and the catalyst contains the only oxygen present.

Similarly, Cao et al. describes regenerating catalyst at temperatures from about 200°C to about 1500°C. (Paragraph 0114, page 9) Cao et al. also describes using a cooler to control the temperature within a regenerator or for cooling catalyst after regeneration. (Paragraphs 0118 – 0121, page 10) However, Cao et al. does not describe or suggest a requirement that regenerated catalyst must be below 550°C prior to mixing the regenerated catalyst with coked catalyst. Additionally, Cao et al. does not describe the atmosphere present when mixing regenerated catalyst with coked catalyst. Thus, Cao et al. does not describe or suggest mixing regenerated catalyst with coked catalyst under conditions where the coke contains the only available carbon and the catalyst contains the only available oxygen.

Fung et al. also describes regenerator temperatures from about 250°C to about 750°C, but again does not describe or suggest a requirement that regenerated catalyst must be below 550°C prior to mixing the regenerated catalyst with coked catalyst. Additionally, Fung et al. describes mixing regenerated catalyst with non-regenerated catalyst in the presence of the "by-products" of an oxygenate to olefin conversion reaction. (Paragraph 0022, page 3) Thus, Fung et al. specifically describes mixing regenerated catalyst with non-regenerated catalyst in the presence of both an alternate source of carbon and an alternate source of oxygen, in contrast to the claimed invention.

Finally, Janssen et al. describes regeneration temperatures from 250°C to 700°C. (Paragraph 0079, page 8) Janssen et al. also describes cooling regenerated catalyst prior to returning the catalyst to the reactor. (Paragraph 0081, page 8) However, the only method described in Janssen et al. for mixing the regenerated catalyst with coked catalyst is by returning the regenerated catalyst to the reactor. (Paragraphs 0078 – 0083) An oxygenate feedstock is also present in the reactor, which provides a source of both carbon and oxygen. This is in contrast with claimed requirement that the coke contains the only carbon present and the catalyst contains the only oxygen present.

For at least these reasons, reconsideration and withdrawal of the rejection are respectfully requested.

II. Conclusion

Having demonstrated that the cited reference fails to disclose the invention as claimed, this application is in condition for allowance. Accordingly, applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated, since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2004B008).

Respectfully submitted,

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